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103 East Neck Road
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EXAMINER

BASKIN, JEREMY S

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/587,794	Applicant(s) VOLLMER ET AL.	
	Examiner Jeremy S. Baskin	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 8-11, 22 and 23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 12-21 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/30/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 8-11, 22, and 23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **with** traverse in the reply filed on 27 May 2009. Claims 1-24 are pending in the present application.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 16-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claim 16 recites limitations directed to an undisclosed valve embodiment that possesses both a damping disk which exits a damping cylinder, as now claimed in Claim 1, in combination with damping diaphragm. Since the embodiment was not adequately disclosed within the written description of the application, the claimed invention is not enabled. Claims 17-18 depend from claim 16.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 1-7, 12-21, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "lightweight" in Claim 1 is a relative term which renders the claim indefinite. The term is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term "lightweight" only bears significance when compared to the weight of another structural body. Since it is unknown what structural body the damping disk is lightweight in relation to, the claim is rendered indefinite.

In regard to Claim 3, it is unclear what is defined as an "undamped range" in the embodiment of Figure 5 since the damping disk is always housed within the damping cylinder. As such, the damping disk is always subjected to at least a minimum damping force. Furthermore, if ever the damping disk were to exit the entire damping cylinder, it would be past the bypass and subjected to a damping force.

Claims 2, 4-7, 12-21, and 24 are rejected as being dependent upon an indefinite claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilson (1,012,779).

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In regard to Claims 1, 2, and 24, Wilson teaches, in Figure 1, a pulse valve with a closing body 3 which cooperates with a valve seat 2. In a first switching position, fluid flow is established between a supply channel 14 and a discharge channel 18 (page 1, para. 2, lines 36-40). A second switching position is illustrated in Figure 1 where fluid flow is blocked. The closing body periodically moves in a reciprocating motion between the switching positions upon actuation of a lever 6. Hydraulic damping against the movement of the closing body by a throttle gap 17 occurs in a damped range at 11. The closing body 3 is connected via a rod 12 to a lightweight damping disk 9. The damping disk is housed in a damping cylinder 15 with the throttle gap 17 formed around the circumference of the damping disk. In the second switching position in Figure 2, the damping disk exits the damping cylinder shortly before the closing body reaches the valve seat 2. When moving from the first switching position to the second switching position, the damping disk moves sequentially through the damped range at 11, a transition region at 17, and an undamped range aligned with 14. A surface at 9 of the damping disk 9 has a cross section larger than a cross section of the closing body at 5.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of Wang et al. (6,896,236).

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In regard to Claim 3, Wilson teaches the limitations as discussed in the rejection of Claims 1 and 2 above, but fails to specifically teach where a bypass extends in parallel with the throttle gap and is actuated along the undamped range.

Wang discloses a damped reciprocating valve. Wang teaches where a bypass 372, 374 extends in parallel with a damping disk 68.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate, in Wilson, a bypass extending parallel with the throttle gap, as taught by Wang, so as to control the displaced damping fluid upon movement of the damping disk and closing body.

9. Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of Gaskell (4,889,288).

In regard to Claims 4, 6, and 7, Wilson teaches the limitations as discussed in the rejection of Claim 1 above, but fails to specifically teach where the throttle gap expands during the transition region.

Gaskell discloses a damped hydraulic pulse valve. In Figure 3, Gaskell teaches where a chamfered throttle gap 48 of a damping cylinder 27 expands at a transition region at 48 as the reciprocating motion of a closing body 21 progresses. The chamfered throttle gap 48 expands continuously in the direction of an open end 27. .

At the time of the invention, it would have been obvious by one of ordinary skill in the art to include, in Wilson, a throttle gap that expands with the linear movement of the closing body, as taught by Gaskell, so as to gradually reduce the damping effect before the damping disk enters the undamped region.

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In regard to Claim 5, Wilson teaches where the damping disk 9 is damped upon reentering the damping cylinder 15 via lever 6.

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of Koneda et al. (6,681,730).

In regard to Claim 12, Wilson teaches the limitations as discussed in the rejection of Claim 1 above, but fails to specifically teach where the damping disk has an axially projecting edge about its circumference.

Koneda discloses a dampened electromagnetic valve. Koneda teaches, in Figure 2, where a damping disk 66 has an axially projecting edge on its upper surface and around its circumference.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate, in Wilson, an axially projecting edge about the circumference of the damping disk, as taught by Koneda, so as to create a desired damping effect on the damping disk by way of a concave surface.

11. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of Cameron et al. (4,190,076).

In regard to Claim 13, Wilson teaches the limitations as discussed in the rejection of Claim 1 above, but fails to specifically teach where the damping disk has a noncircular surface.

Cameron discloses a valve with fluid damping. In Figure 3, Cameron teaches where a damping disk 84 has noncircular surfaces 92 (see Abstract).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate, in Wilson, noncircular surfaces on the damping disk, as taught by Cameron, so as

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to provide a slidable contact between the damping disk and damping cylinder while still allowing for damping fluid to pass around the damping disk.

12. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of Volcov (2,868,492).

In regard to Claims 14 and 15, Wilson teaches the limitations as discussed in the rejection of Claim 1 above and where the damping disk 9 is very thin, but fails to specifically teach where the damping disk has a perforated structure.

Volcov discloses a discharge valve with hydraulic damping. Volcov teaches where the damping disk 5 possesses a fine perforated structure with holes that can be measured in micrometer units (col. 2, lines 1-15).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate, in Wilson, perforations on the damping disk, as taught by Volcov, so as to create a throttled dampening effect on the damping disk utilizing fluid passing directly through the damping disk. The specific size of perforations chosen would result in a proportional change in damping effect on the damping disk and is therefore a design expedient.

13. Claims 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of Masaji et al. (JP 58028079 A, English abstract only)

In regard to Claims 16-18, Wilson fails to teach where the hydraulic throttling is produced via a fluid-permeable diaphragm connected around the housing and valve stem or rod.

Masaji discloses an electromagnetic fluid control valve with damping. Masaji teaches where a fluid permeable 25 diaphragm 6 is clamped to the housing 18 and stem 17. The diaphragm is elastic and semi-rigid with the attachment of plates 9 and 10. For the valve to work

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properly as desired, the elastic properties of the diaphragm are matched to the desired damping characteristics of the closing body 5.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate, in Wilson, a fluid permeable diaphragm attached between the valve stem and valve body, as taught by Masaji, as a means of creating a redundant damping effect on the central valve stem.

In regard to Claims 19-21, Wilson fails to teach where a diaphragm has a fine-meshed composite network structure with the cross-section of the mesh in the micrometer range.

However, Masaji teaches where a diaphragm 6 is fluid permeable via holes 25 in Figure 2. As such, the mere duplication of holes on the diaphragm of Masaji would necessarily form a fine-meshed network structure as claimed. It has been held that the mere duplication of parts over the prior art supports a prima facie case of obviousness. As with virtually any object, the holes 25 can be measured in the micrometer range. See MPEP 2144.04. In order for the diaphragm of Masaji to display its elastic properties, it is notoriously known in the art for the diaphragm to be formed of a composite material.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to incorporate, in Wilson, a fine meshed composite diaphragm, as taught by Masaji, so as to create a desired dampening effect as fluid passes directly through the diaphragm.

Response to Arguments

14. Applicant's arguments with respect to Claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Blein et al. (828,374) discloses a damping disk which exits a damping chamber upon closing of a main valve body.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy S. Baskin whose telephone number is (571) 270-7421. The examiner can normally be reached on Monday through Friday, 7:30AM to 5:00PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/STEPHEN HEPERLE/
Primary Examiner, Art Unit 3753

/J. S. B./
Examiner, Art Unit 3753